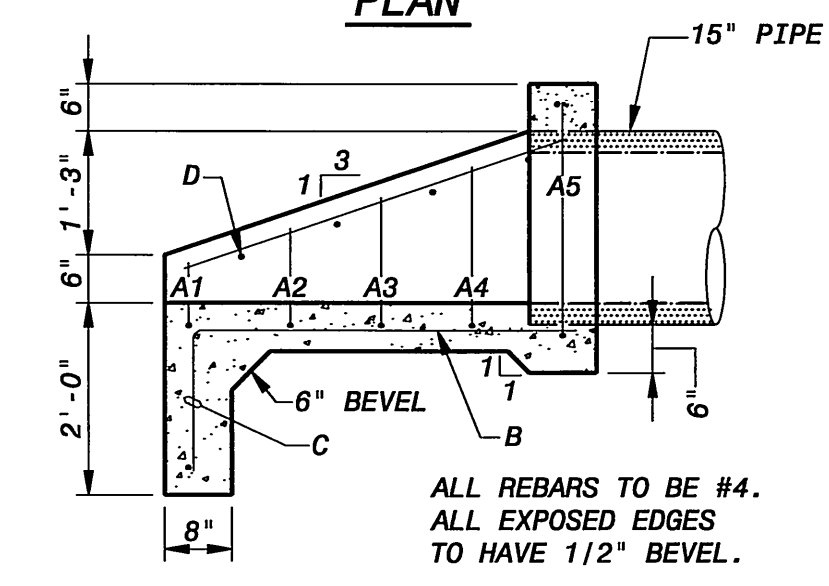
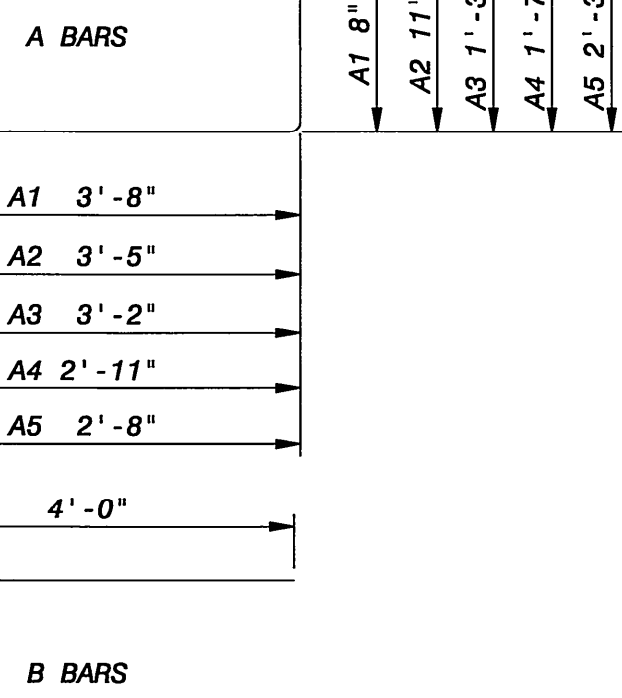


PLAN



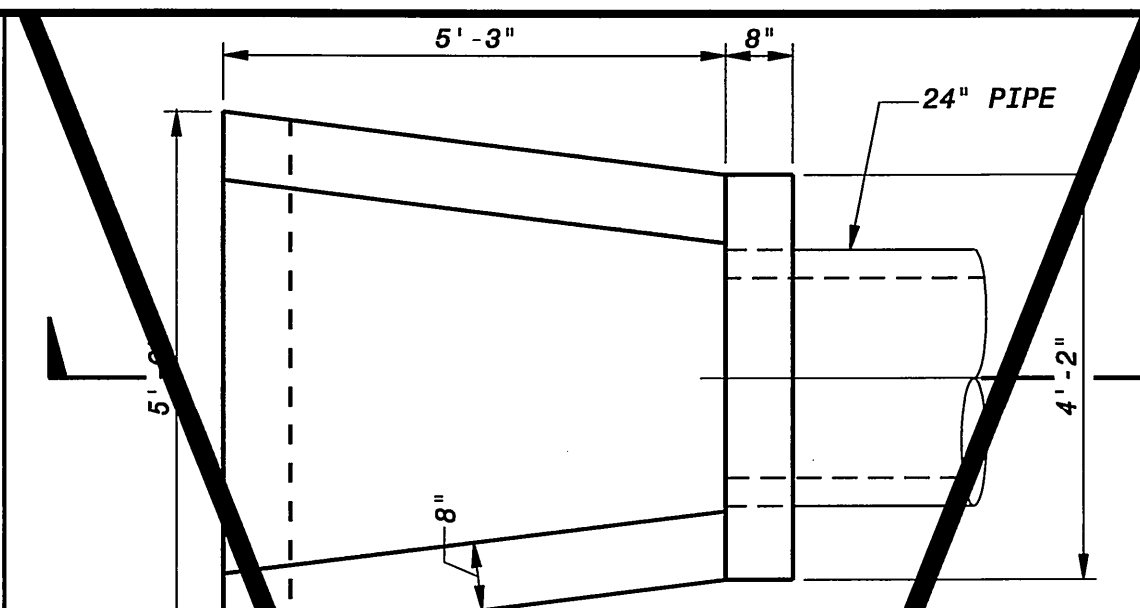
SECTION



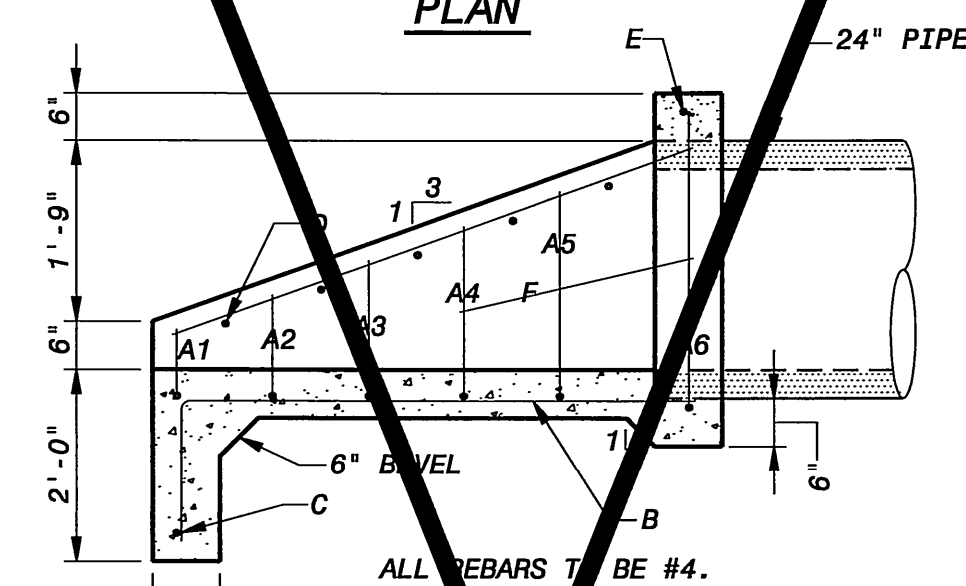
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
A1	7	5'-0"		3.34
A2	7	5'-3"		3.51
A3	7	5'-8"		3.79
A4	7	6'-1"		4.06
A5	7	7'-2"		4.79
B	5	5'-6"		18.37
C	1	4'-0"		2.67
D	2	4'-0"		5.34
E	1	3'-2"		2.12
TOTAL REBAR, LBS				47.99
CONCRETE, C.Y.				0.91

ALL REBARS TO BE #4.

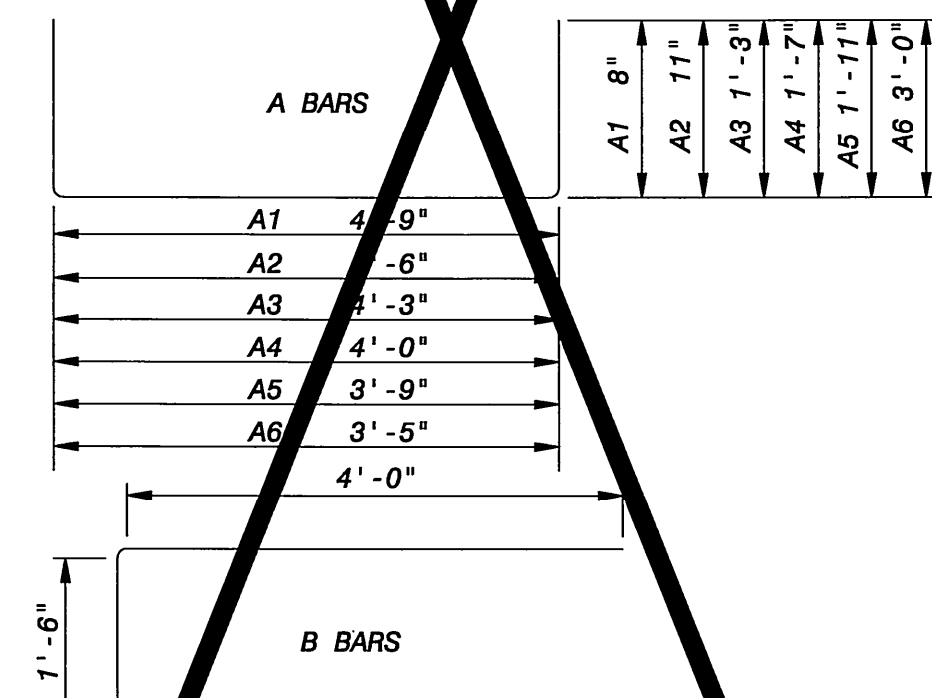
HEADWALL FOR 15" PIPE



PLAN



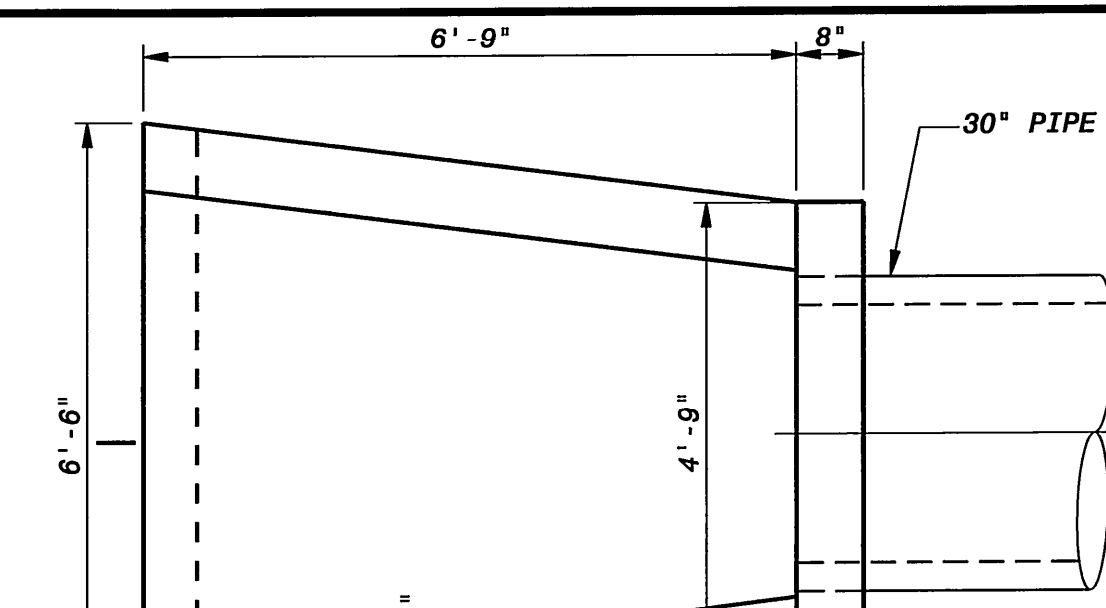
SECTION



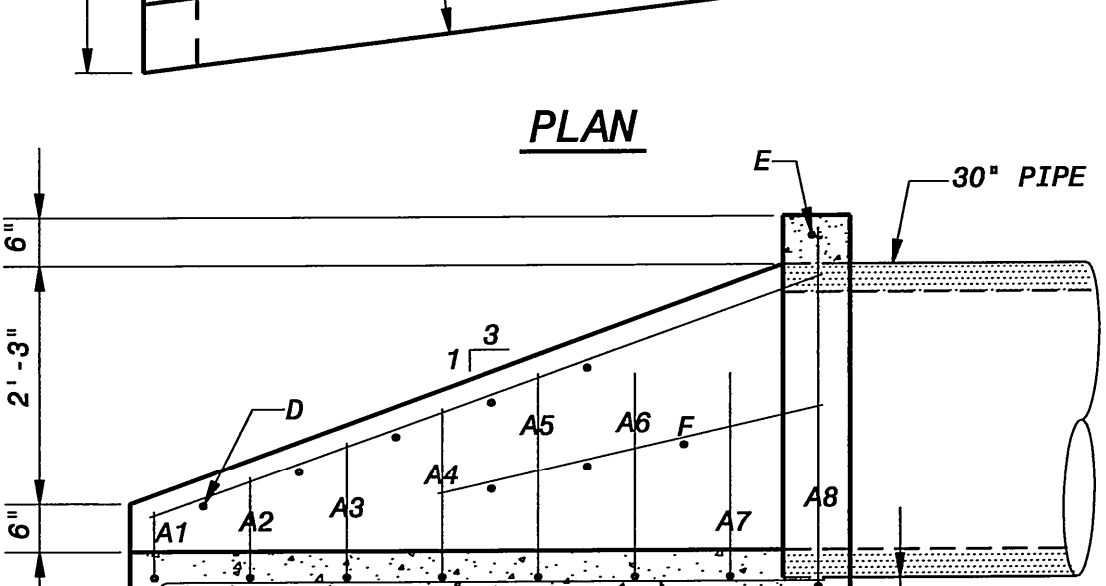
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
A1	1	6'-1"		4.06
A2	1	6'-4"		4.23
A3	1	6'-9"		4.51
A4	1	7'-2"		4.79
A5	1	7'-7"		5.07
A6	1	9'-5"		6.29
B	6	6'-11"		27.7
C	1	5'-0"		3.37
D	2	5'-10"		7.79
E	1	3'-10"		2.56
F	2	2'-9"		3.67
TOTAL REBAR, LBS				74.03
CONCRETE, C.Y.				1.40

ALL REBARS TO BE #4.

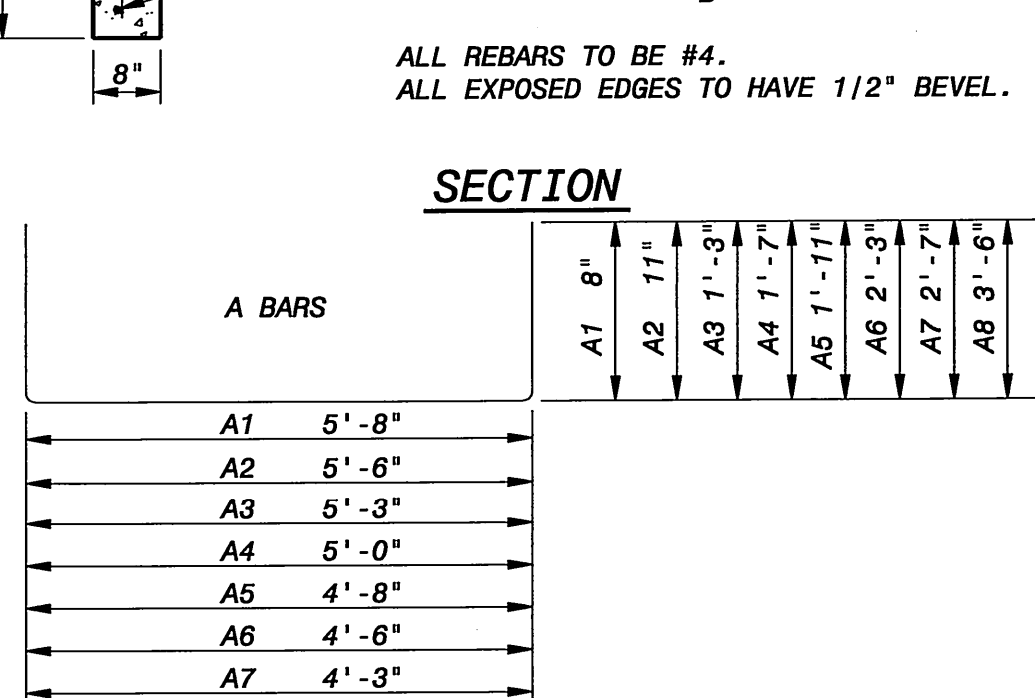
HEADWALL FOR 24" PIPE



PLAN



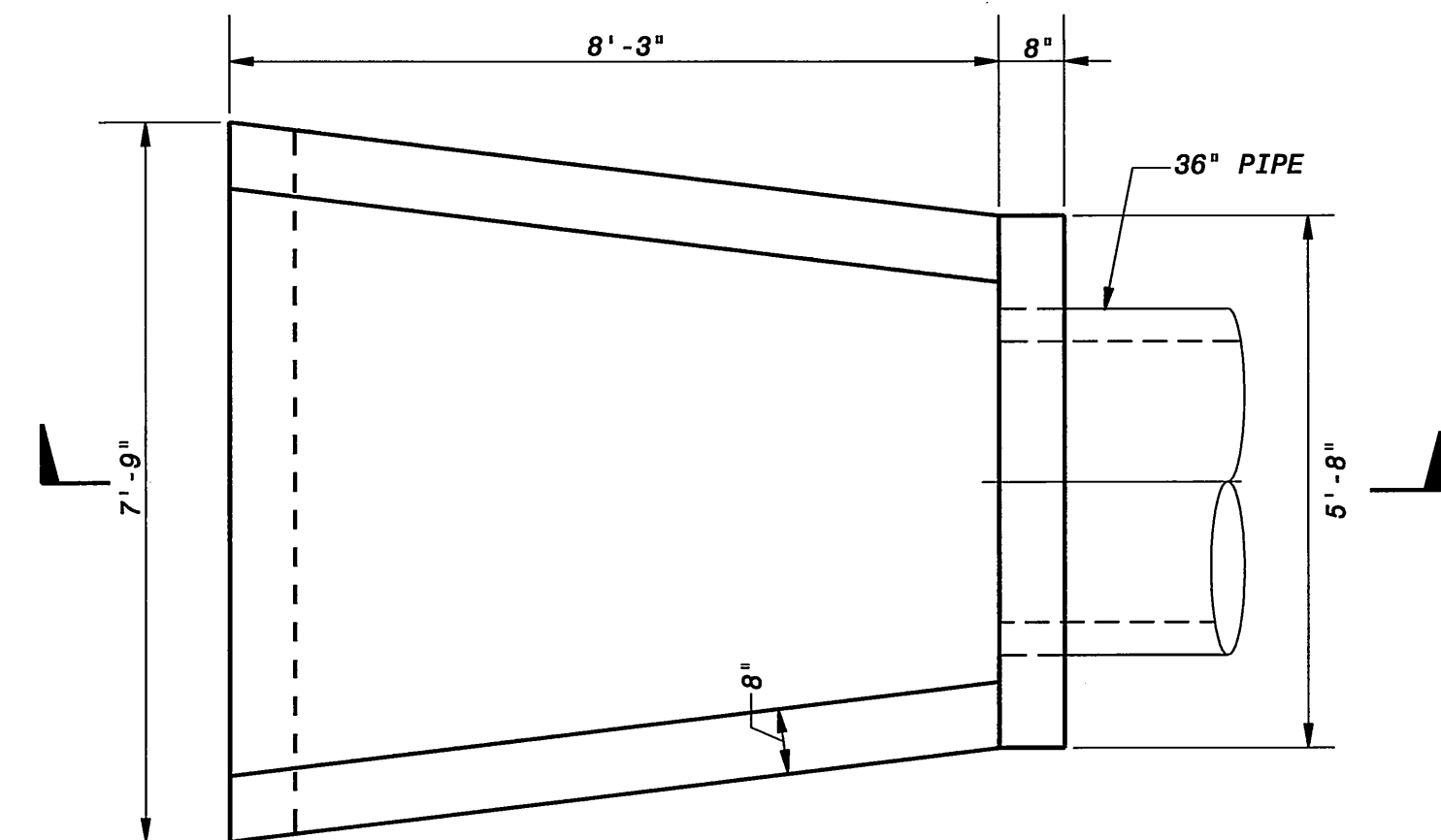
SECTION



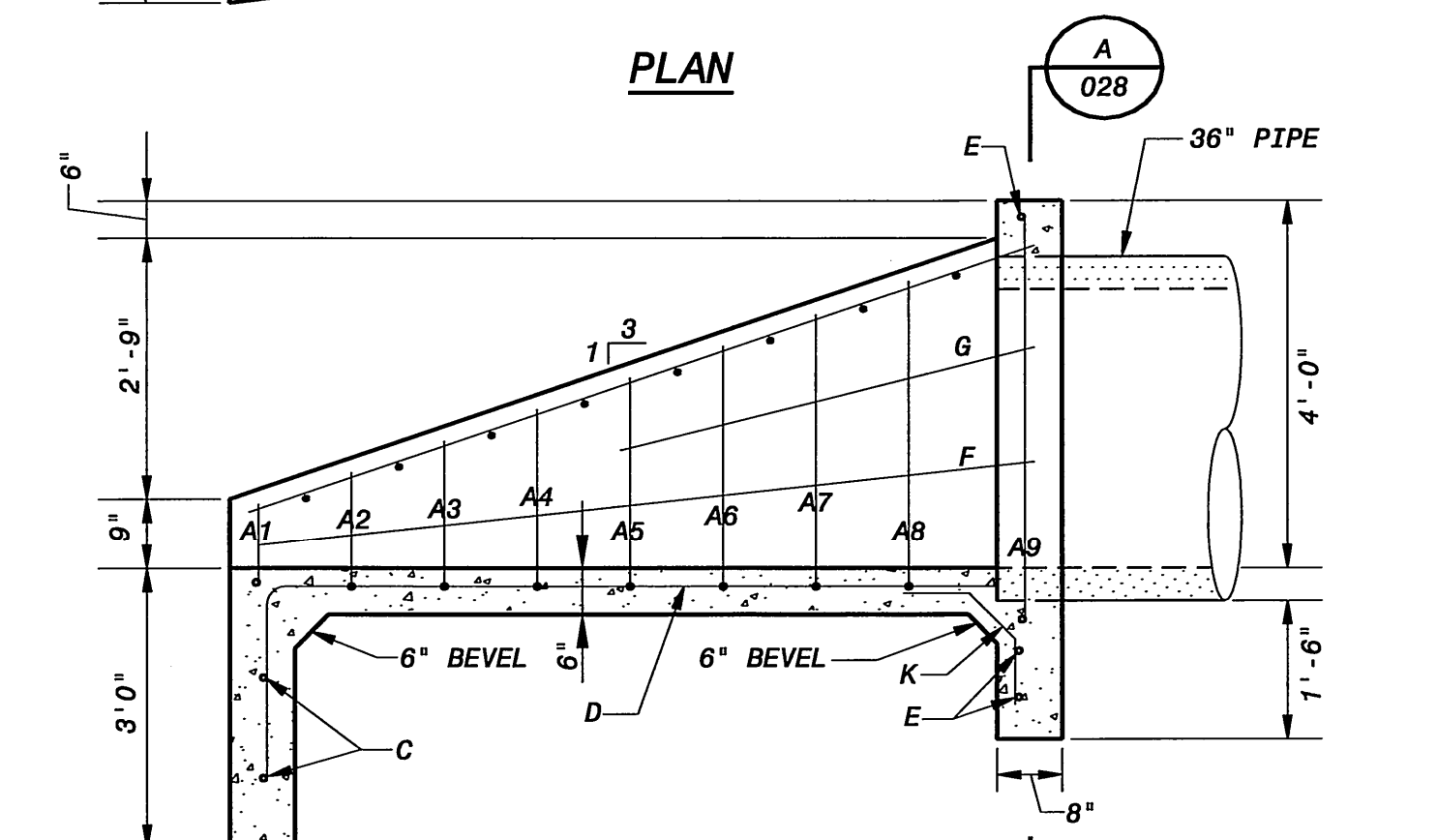
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
A1	1	7'-0"		4.68
A2	1	7'-4"		4.90
A3	1	7'-9"		5.18
A4	1	8'-2"		5.46
A5	1	8'-6"		5.68
A6	1	9'-0"		6.01
A7	1	9'-5"		6.29
A8	1	11'-1"		7.40
B	7	8'-6"		35.07
C	1	6'-0"		4.01
D	2	7'-6"		10.02
E	1	4'-5"		2.95
F	2	4'-3"		5.68
TOTAL REBAR, LBS				103.33
CONCRETE, C.Y.				2.01

ALL REBARS TO BE #4.

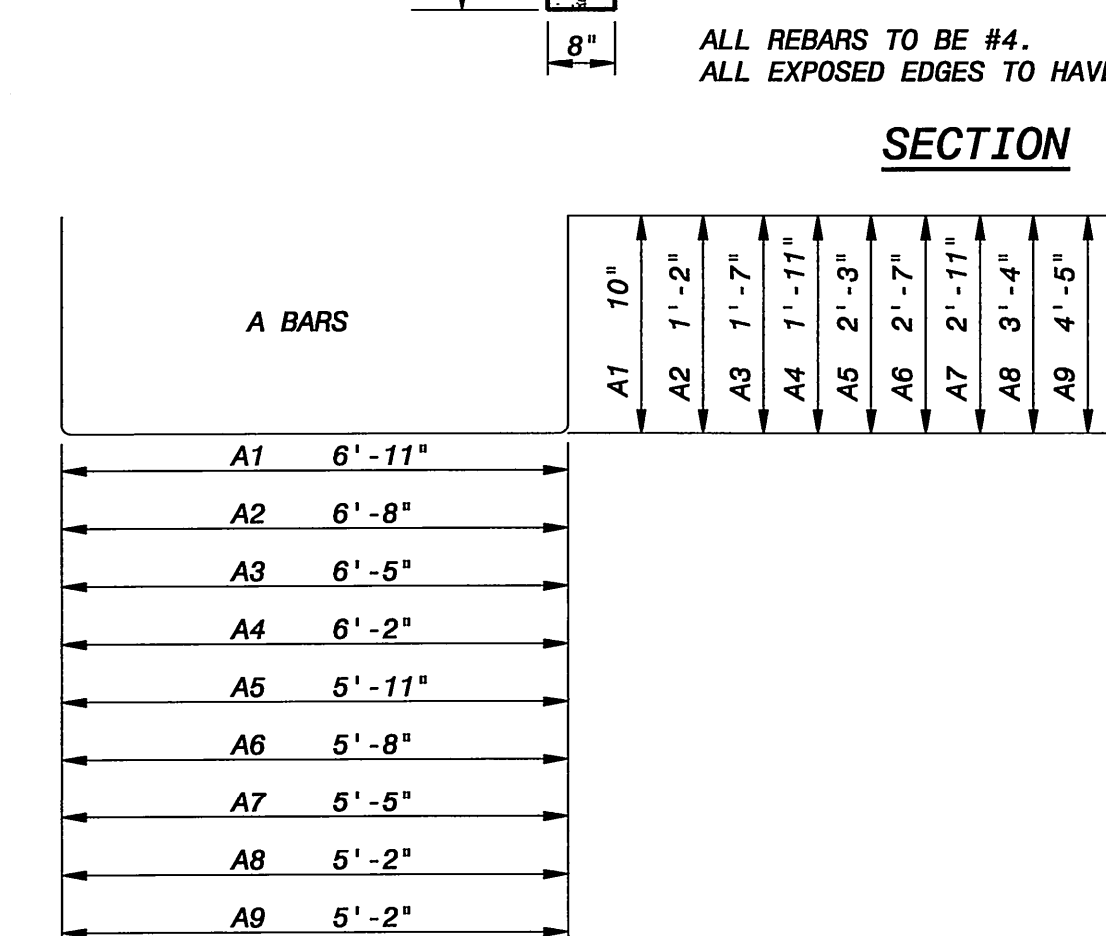
HEADWALL FOR 30" PIPE



PLAN



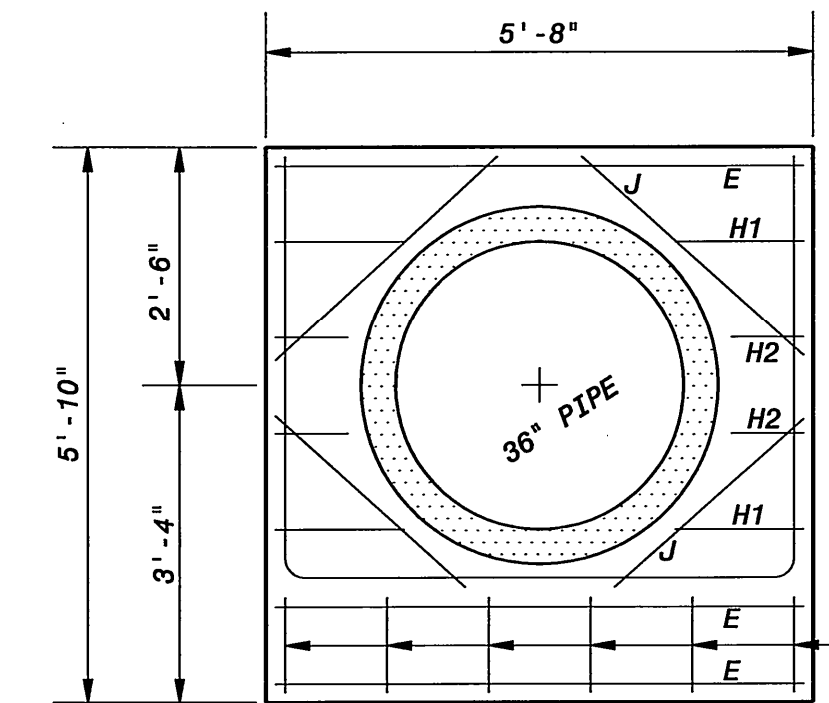
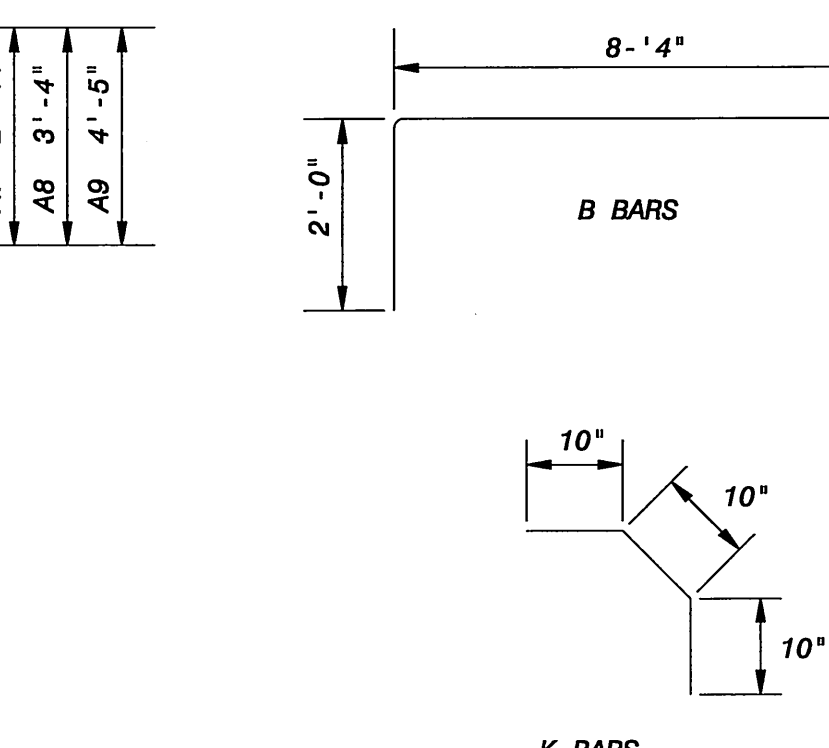
SECTION



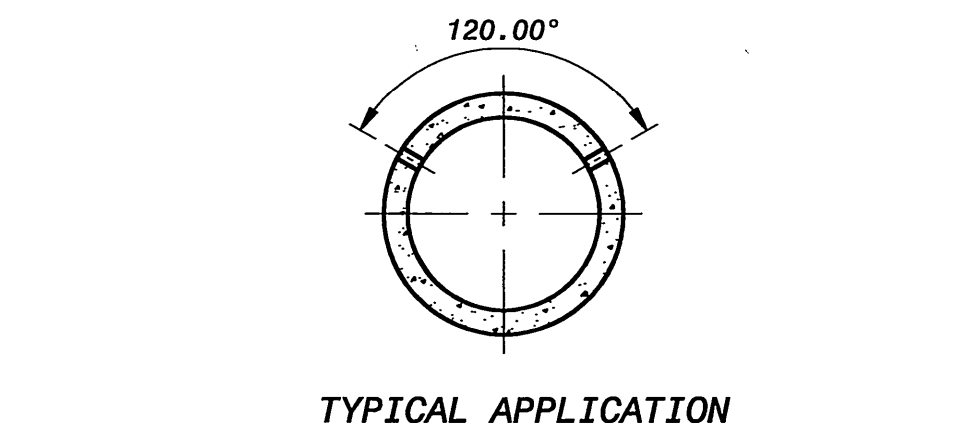
BAR	NUMBER	LENGTH	SHAPE	WEIGHT
A1	1	8'-7"		5.73
A2	1	9'-0"		6.01
A3	1	9'-7"		6.40
A4	1	10'-0"		6.68
A5	1	10'-5"		6.96
A6	1	10'-10"		7.24
A7	1	11'-3"		7.52
A8	1	11'-10"		7.90
A9	1	14'-0"		9.35
B	6	10'-4"		41.42
C	2	7'-0"		9.35
D	2	9'-0"		12.02
E	3	5'-4"		10.69
F	2	8'-5"		11.24
G	2	4'-7"		6.12
H1	4	1'-6"		4.01
H2	4	10"		2.23
J	4	3'-0"		8.02
K	6	2'-6"		10.02
TOTAL REBAR, LBS				178.91
CONCRETE, C.Y.				3.2

ALL REBARS TO BE #4.

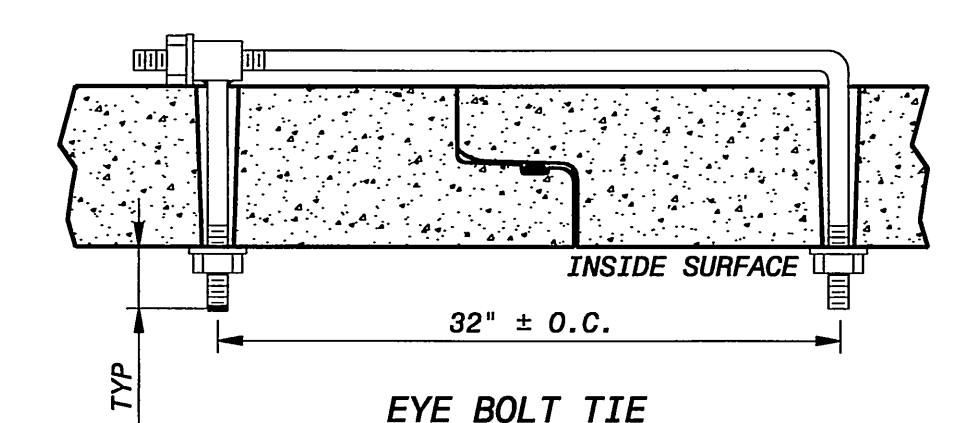
HEADWALL FOR 36" PIPE



A-A SECTION

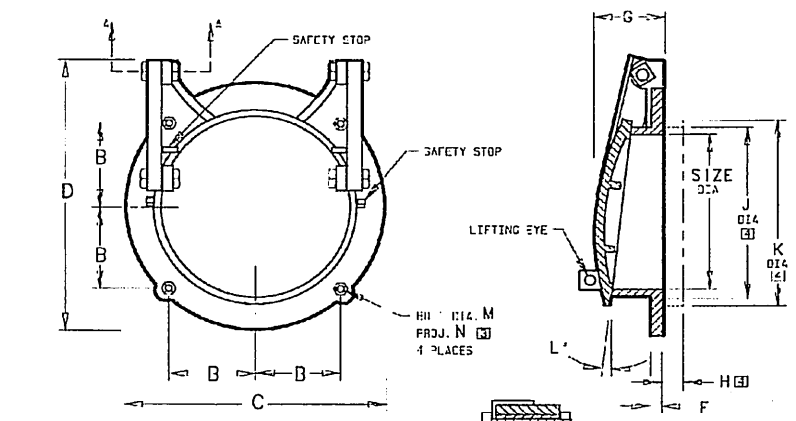


TYPICAL APPLICATION



EYE BOLT TIE

GASKETED PIPE JOINT TIES

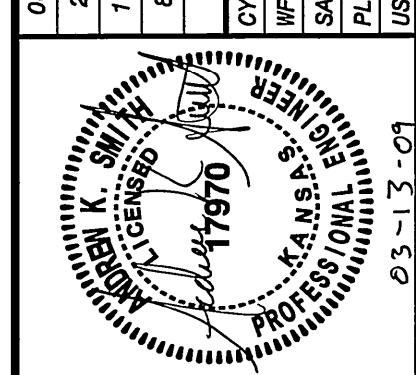


NOTE:  
USE WATERMAN SETTING COLLAR (OR APPROVED EQUAL)  
TO MOUNT FLAPGATE TO CONCRETE PIPE AS PER  
MANUFACTURERS SPECIFICATIONS.

GATE DIMENSIONS IN INCHES											
MODEL F-10 SIZE DIA.	B	C	D	F	G	H	J	K	L	M	N
15	6 1/4	18 3/8	20	8 3/8	5	2 1/4	16	16 3/4	5	1/2	1 3/8
30	12	34	39 3/8	16 3/8	6 1/2	2 3/8	31	32	2 1/2	3/4	2

FLAP GATE DETAIL C  
NO SCALE

DATE	BY	REVISION
4 DEC		CONSTRUCTION SET
3 DEC		100% SUBMITTAL
2 DEC		90% SUBMITTAL - FOR REVIEW ONLY
1 DEC		70% SUBMITTAL - FOR REVIEW ONLY
		REVISIONS AND RECORD OF ISSUE
		NO. BY CK APP
		DATE
		PROJECT NO. 143234-320-WP-C-10000502
		USER: C0037033
		DATE: 13 MAR 2009
		TIME: 8:55:13 AM
		USER: C0037033
		DATE: 13 MAR 2009
		TIME: 8:55:13 AM
		USER: C0037033



**BLACK & VEATCH**  
Building a world of difference  
Black & Veatch Corporation  
Kansas City, Missouri

**DRY CREEK CHANNEL IMPROVEMENTS**  
WICHITA, KANSAS  
LINCOLN TO ORME  
MODIFIED CITY OF WICHITA STANDARD  
HEADWALL DETAILS FOR 18", 24", 30" & 36" PIPES

DESIGNED: CITY OF WICHITA  
DETAILED: CITY OF WICHITA  
CHECKED: CITY OF WICHITA  
APPROVED:  
DATE: 13 MAR 2009

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.  
143234  
026  
SHEET  
26 OF 42